

SECTION 09 67 23

RESINOUS KITCHEN FLOORING

ULTRA-TREAD S POLYURETHANE MODIFIED CONCRETE WITH COLOR QUARTZ

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Resinous Flooring System for use in commercial kitchens, restaurants, and wet areas as shown on drawings and in schedules.

1.2 RELATED SECTIONS

- A. Section 03 01 30 – Maintenance of Cast-In-Place Concrete.
- B. Section 09 67 00 - Fluid-Applied Flooring.
- C. Section 09 96 35 – Chemical Resistant Coatings.
- D. Section 09 67 26 – Quartz Flooring.

1.3 REFERENCES

- A. ASTM D 16 - Terminology Relating to Paint, Varnish, Lacquer, and Related Products.
- B. ASTM D 4259 – Standard Practice for Abrading Concrete.
- C. ASTM D 4263 - Indicating Moisture in Concrete by the Plastic Sheet Method.
- D. ASTM F 1869 - Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride.
- E. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using *in situ* Probes
- F. International Concrete Repair Institute (ICRI) Guideline No. 03732 - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, and Polymer Overlays.
- G. SSPC-SP 13/NACE 6 - Surface Preparation of Concrete.

1.4 DEFINITIONS

- A. Definitions of Painting Terms: ASTM D 16, unless otherwise specified.
- B. Dry Film Thickness (DFT): Thickness of a coat of paint in fully cured state measured in mils (1/1000 inch).

1.5 SUBMITTALS

- A. Comply with Section 01330 - Submittal Procedures.
- B. Product Data: Submit manufacturer's product data for each coating, including generic description, complete technical data, surface preparation, and application instructions.
- C. MSDS: Provide manufacturer's material safety data sheet for each product used.
- D. Color Samples: Submit manufacturer's color samples showing full range of standard colors.
- E. Manufacturer's Quality Assurance: Submit manufacturer's certification that coatings comply with specified requirements and are suitable for intended application.
- F. Applicator's Quality Assurance: Submit list of a minimum of 5 completed projects of similar size and complexity to this Work. Include for each project:
 1. Project name and location.
 2. Name of owner.
 3. Name of contractor.
 4. Name of architect.
 5. Name of coating manufacturer.
 6. Approximate area of coatings applied.
 7. Date of completion.
- G. Warranty: Submit flooring manufacturer's standard warranty.

1.6 QUALITY ASSURANCE

- A. Manufacturer's Qualifications:
 1. Specialize in manufacture of coatings with a minimum of 10 years successful experience.
 2. Able to demonstrate successful performance on comparable projects.
 3. Single Source Responsibility: Coatings and coating application accessories shall be products of a single manufacturer.
- B. Applicator's Qualifications:
 1. Experienced in application of specified coatings for a minimum of 10 years on projects of similar size and complexity to this Work.
 2. Applicator's Personnel: Employ persons trained for application of specified coatings.
 3. Manufacturer shall provide letter stating that the applicator is approved to install specified flooring system.
- C. Samples: Prepare 6" x 8" sample or similar for each flooring system specified using same materials, tools, equipment, and procedures. Obtain Architect's approval of samples. Retain samples to establish intended standards by which coating systems will be judged.

D. Pre-application Meeting: Convene a pre-application meeting [2] [_____] weeks before start of application of coating systems. Require attendance of parties directly affecting work of this section, including Contractor, Architect, applicator, and manufacturer's representative. Review the following:

1. Environmental requirements.
2. Protection of surfaces not scheduled to be coated.
3. Surface preparation.
4. Application.
5. Repair.
6. Field quality control.
7. Cleaning.
8. Protection of coating systems.
9. Coordination with other work.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Delivery: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying:

1. Coating or material name.
2. Manufacturer.
3. Color name and number.
4. Batch or lot number.
5. Date of manufacture.
6. Mixing and thinning instructions.

B. Storage:

1. Store materials in a clean dry area and within temperature range in accordance with manufacturer's instructions.
2. Keep containers sealed until ready for use.
3. Do not use materials beyond manufacturer's shelf life limits.

C. Handling: Protect materials during handling and application to prevent damage or contamination.

1.8 ENVIRONMENTAL REQUIREMENTS

A. Weather:

1. Air and Surface Temperatures: Prepare surfaces and apply and cure coatings within air and surface temperature range in accordance with manufacturer's instructions.
2. Surface Temperature: Minimum of 5 degrees F (3 degrees C) above dew point.
3. Relative Humidity: Prepare surfaces and apply and cure coatings within relative humidity range in accordance with manufacturer's instructions.

B. Ventilation: Provide ventilation during coating evaporation stage in confined or enclosed areas in accordance with manufacturer's instructions.

C. Dust and Contaminants:

1. Schedule coating work to avoid excessive dust and airborne contaminants.
2. Protect work areas from excessive dust and airborne contaminants during coating application and curing.

PART 2 PRODUCTS

2.1 MANUFACTURER

- A. Tnemec Company Incorporated, 6800 Corporate Drive, Kansas City, Missouri 64120-1372. Toll Free (800) 863-6321. Phone (816) 483-3400. Fax (816) 483-3969. Tnemec/StrataShield Representative TPC Consultants, (310) 637-2363, (858) 538-9502. www.tnemec.com/tpc
- B. Equivalent materials of other manufacturers may be considered should they exceed the performance of the specified products on approval of the Architect or Engineer. Requests for substitution will be considered, if submitted within ten (10) days after the execution of the G.C.'s contract, and shall include the respective manufacturer's technical literature for each product giving the name, generic type, descriptive information, recommended dry film thickness, certified test reports showing results to equal the performance criteria as specified herein and the Manufacturer's Safety Data Sheets (MSDS) for each product. No request for substitution shall be considered that would change the generic type of coating system specified. Manufacturers of Approved System shall be of single source and made in the USA

2.2 RESINOUS FLOORING SYSTEM

- A. Heavy Abuse, Thermal Shock, Wet, Urethane/Epoxy/ Color Quartz Flooring System. For use areas requiring treatment for concrete moisture vapor transmission up to 20lbs. and relative humidity up to 99%. System can also be applied to concrete that has cured a minimum of 10 days.
 1. System Type: Urethane/Color Quartz Epoxy.
 2. Surface Preparation: Shot Blast or Mech. Abrade (CSP 5).
 3. Primer/Base Coat: Series 242 Ultra-Tread S @ 1/8". (50 Sq. Ft./Kit).
 4. Broadcast: Broadcast Color Quartz to refusal @ .8 to 1 lbs./SF
 5. Grout Coat: Series 284 Deco-Clear @ 14.0 to 16.0 Mils DFT. (100 to 115 Sq./Ft./Gal.)
 6. Finish Coat: Series 284 Deco-Clear @ 6.0 to 8.0 Mils DFT. (200 to 267 Sq./Ft./Gal.)
 6. Total System DFT: 3/16" inch.

2.3 6 " ROLLED RADIUS COVE BASE - COLOR QUARTZ

- A. Moderate Abuse, Decorative, Wet, Epoxy Color Quartz Cove Base System.
 1. System Type: Color Quartz Epoxy.
 2. 1st Coat: Series 222 Deco-Tread @ 4.0 to 6.0 mils DFT. (267 to 400 Sf./Gal.)
 3. 2nd Coat: Series 222 Deco-Tread Trowel Mortar with Color Quartz.
 4. 3rd Coat: Series 284 Deco-Clear @ 4.0 to 8.0 mils DFT. (200 to 400 Sf./Gal.)
 5. 4th Coat: Series 284 Deco-Clear @ 4.0 to 8.0 Mils DFT. (200 to 400 Sf./Gal.)

2.4 ACCESSORIES

A. Coating Application Accessories:

1. Accessories required for application of specified coatings in accordance with manufacturer's instructions, including thinners.
2. Products of coating manufacturer.

2.5 PRODUCT PERFORMANCE

A. Primer/Basecoat	Series 242 Ultra-Tread S
1. Percent Solids	92 %
2. Generic Type	Urethane Cement Slurry
3. VOC	8 grams/litre
4. Adhesion to Concrete ASTM D 4541	400 psi, Concrete Failure
5. Hardness, ASTM D 2240	67 Shore D
6. Compressive, ASTM C 579	4,922 psi
7. Flexural Strength, ASTM C 580	2,438 psi
8. Tensile Strength, ASTM C 580	1,015 psi
9. Moisture Vapor Transmission (Maximum)	20 lbs.
10. Relative Humidity (Maximum)	99%
B. Broadcast, and Grout Coat	Series 222/284
1. Percent Solids	100 %
2. Generic Type	Modified Polyamine Epoxy
3. VOC	1.5 grams/litre
4. Pot Life @ 75°F	25-30 minutes
5. Abrasion, ASTM D 4060	65.2 mg loss
6. Compressive Strength, ASTM D 579	15,500 psi
7. Flexural Strength, ASTM C 580	2,867 psi
8. Tensile Strength, ASTM D 638	2,183 psi
9. Rate of Burning, ASTM D 635	less than 198 seconds
10. Impact Resistance, ASTM D 2240	160 inch pounds average, direct
11. Water Absorption, ASTM C 413	No more than 0.1 grams

PART 3 EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions under which coating systems are to be applied. Notify Architect of areas or conditions not acceptable. Do not begin surface preparation or application until unacceptable areas or conditions have been corrected.

3.2 PROTECTION OF SURFACES NOT SCHEDULED TO BE COATED

A. Protect surrounding areas and surfaces not scheduled to be coated from damage during

surface preparation and application of coatings.

- B. Immediately remove coatings that fall on surrounding areas and surfaces not scheduled to be coated.

3.3 SURFACE PREPARATION OF CONCRETE FLOORS

- A. Allow new cast-in-place concrete to cure a minimum of 10 days at 75°F (24°C).
- B. Verify concrete dryness and prepare concrete surfaces in accordance with NACE No. 6/SSPC-SP13 Joint Surface Preparation Standards and ICRI 03732 Technical Guidelines.
- C. Remove all existing tile, mortar to expose concrete floors to be coated.
- D. Ensure surfaces are clean, dry, and free of oil, grease, dirt, dust, and other soluble contaminants. Shot-blast or mechanically abrade concrete surfaces to remove all contaminants and to provide a minimum ICRI-CSP 5 surface profile. Floor areas inaccessible to the blast machines shall be mechanically abraded to the same degree of cleanliness, soundness and profile using diamond grinders, needle guns, bush hammers, or other suitable equipment.
- E. Large cracks, voids and other surface imperfections shall be filled with a recommended filler or surfacer prior to application of 1st coat.
- F. Test concrete for moisture in accordance with ASTM D 4263 and F1869. Ultra-Tread MVT may be installed in areas where high rates of moisture vapor transmission would prevent the use of non-breathing flooring systems. Moisture vapor transmission should not exceed 20 lbs per 1,000 sq ft in a 24 hour period (Reference ASTM F 1869 "Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor using Anhydrous Calcium Chloride"). Relative humidity should not exceed 99% (Reference ASTM F 2170 "Standard Test Method for Determining Relative Humidity in Concrete using in situ Probes").
- G. Where a free edge will occur, including doorways, wall perimeters, expansion joints, columns, doorways, drains and equipment pads, a 3/16" inch deep by 3/16 inch wide keyways shall be cut in.

3.4 APPLICATION

- A. Apply coatings in accordance with manufacturer's instructions. Allow sufficient curing time between coats as listed on the manufacturers product data sheet.
- B. Mix and thin coatings, including multi-component materials, in accordance with manufacturer's instructions.

- C. Keep containers closed when not in use to avoid contamination.
- D. Do not use mixed coatings beyond pot life limits.
- E. Use application equipment, tools, pressure settings, and techniques in accordance with manufacturer's instructions.
- F. Uniformly apply coatings at spreading rate required to achieve specified DFT.
- G. Apply coatings to be free of film characteristics or defects that would adversely affect performance or appearance of coating systems.

3.5 REPAIR

- A. Materials and Surfaces Not Scheduled To Be Coated: Repair or replace damaged materials and surfaces not scheduled to be coated.
- B. Damaged Coatings: Touch-up or repair damaged coatings. Touch-up of minor damage shall be acceptable where result is not visibly different from adjacent surfaces. Recoat entire surface where touch-up result is visibly different, either in sheen, texture, or color.
- C. Coating Defects: Repair in accordance with manufacturer's instructions coatings that exhibit film characteristics or defects that would adversely affect performance or appearance of coating systems.

3.6 FIELD QUALITY CONTROL

- A. Inspector's Services:
 - 1. Verify coatings and other materials are as specified.
 - 2. Verify surface preparation and application are as specified.
 - 3. Verify DFT of each coat and total DFT of the coating system is as specified using wet film and dry film gauges.
 - 4. Coating Defects: Check coatings for film characteristics or defects that would adversely affect performance or appearance of coating systems.
 - 5. Report:
 - a. Submit written reports describing inspections made and actions taken to correct nonconforming work.
 - b. Report nonconforming work not corrected.
 - c. Submit copies of report to Architect and Contractor.
- B. Manufacturer's Field Services: Manufacturer's representative shall provide technical assistance and guidance for surface preparation and application of coating systems.

3.7 CLEANING

- A. Remove temporary coverings and protection of surrounding areas and surfaces.

3.8 PROTECTION OF COATING SYSTEMS

- A. Protect surfaces of coating systems from damage during construction.

END OF SECTION